

THE IDENTITY OF *ANTIZOMA HARVEYANA* MIERS EX HARV. AND *A. CAPENSIS* (L.f.) DIELS

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ABSTRACT

An examination and evaluation of available evidence leads to the conclusion that *Antizoma harveyana* Miers ex Harv. must be regarded as a synonym of *A. angustifolia* (Burch.) Miers ex Harv.; that *Antizoma capensis* L.f. Diels must be returned to *Cissampelos* and that the variety *Antizoma capensis* L.f. Diels var. *pulverulenta* (Harv.) Diels must be reduced to synonymy under *Cissampelos capensis* L.f.. Consequently, the number of *Antizoma* species is now reduced to two.

UITTREKSEL

DIE IDENTITEIT VAN *ANTIZOMA HARVEYANA* MIERS EX HARV. EN *A. CAPENSIS* (L.f.) DIELS

'n Ondersoek en evaluasie van beskikbare getuienis lei tot die gevolgtrekking dat *Antizoma harveyana* Miers ex Harv. as 'n sinoniem van *A. angustifolia* (Burch.) Miers ex Harv. beskou moet word; dat *Antizoma capensis* L.f. Diels oorgeplaas moet word na *Cissampelos* en dat die variëteit *Antizoma capensis* L.f. Diels var. *pulverulenta* (Harv.) Diels as 'n sinoniem van *Cissampelos capensis* L.f. beskou moet word. Gevolglik word die getal *Antizoma*-spesies nou tot twee verminder.

1. *ANTIZOMA HARVEYANA*

Miers (1851) created the genus *Antizoma*, based on material collected in various parts of Southern Africa. Eight years later, Harvey (1859), published the names of five species belonging to this genus.

The following three taxa, already known at that time, were transferred from *Cissampelos*.

Antizoma angustifolia = *Cissampelos angustifolius* Burch. (1822) non. E. Mey. (1847).

Antizoma calcarifera = *Cissampelos calcarifera* Burch. (1824).

Antizoma miersiana = *Cissampelos angustifolia* E. Mey. (1847), non Burch. (1822).

The other two newly published species were: *Antizoma harveyana* Miers ex Harv. and *A. burchelliana* Miers ex Harv.

Durand et Schinz (1898), rejected the genus *Antizoma* and simultaneously changed the rank of *A. harveyana* and transferred it to *Cissampelos* as a subspecies of *C. angustifolius* Burch.

Diels (1910), however, accepted the genus *Antizoma* and retained the species *A. harveyana* and *A. miersiana*, but erroneously regarded *A. angustifolia* and *A. burchelliana* as synonyms for *A. calcarifera*.

At present, due to the priority of the basionym, the combination *Antizoma angustifolia* (Burch.) Miers ex Harv. is regarded as valid with *A. burchelliana* and *A. calcarifera* as synonyms.

Thus, up to now, *A. angustifolia*, *A. capensis* [transferred from *Cissampelos* by Diels (1910)] *A. miersiana* and *A. harveyana* have been regarded as distinct species.

According to Diels (1910, p. 307):

“Branches pubescent; Sepals on the outside pubescent; the synandrium 8-locular
 *A. angustifolia*
 (= *A. calcarifera*)

Branches glabrous; the sepals on the outside minutely pilose or glabrous; the leaves presently becoming glabrous; synandrium 4-6-locular .. *A. harveyana*.”

the only characteristics by which *A. angustifolia* and *A. harveyana* can be distinguished from one another, are the difference in indumentum of the different parts of the two plants and the number of locules of the synandrium.

The number of locules of the synandrium, however, cannot be regarded as a distinguishing characteristic, because it varies from 4-14 in both taxa, with no definite number of locules even in flowers of the same plant.

When taking other aspects, such as external morphology of the vegetative and reproductive parts (excluding the indumentum), anatomy, fruit and pollen morphology into consideration, there is virtually no difference between *A. angustifolia* and *A. harveyana*.

Regarding the indumentum, a survey of the two taxa showed that *A. harveyana* is never wholly glabrous and that intermediates exist between the two species.

Furthermore, keeping in mind that certain species, e.g. *A. angustifolia* and *A. capensis*, usually have a better developed indumentum in regions such as South West Africa (experiments in hot houses with *Cissampelos torulosa* and *C. hirta* confirm this), the separation of *Antizoma harveyana* and *A. angustifolia* in two taxa, becomes dubious. The two taxa are therefore combined.

Antizoma angustifolia (Burch.) Miers ex Harv. in Harv. et Sond., F.C. 1: 13 (1859); Miers in Contrib. Bot. 3: 200 (1871); Diels in Engl., Pflanzenr. IV-94:308 (1910); Burt Davy in Kew Bull.: 341 (1921); Merxm., F.S.W.A. 38: 2 (1968).

Cissampelos angustifolius Burch., Trav. 1: 389 (1822) non E. Mey. (1847); Type: Griqualand West, Burchell 1717 (PRE, iso.!).

Antizoma calcarifera (Burch.) Miers, Ann. Mag. Nat. Hist. ser. 2,7: 41 (1851); Miers ex Harv. in Harv. et Sond., F.C. 1: 12 (1859); Diels in Engl., Pflanzenr. IV-94: 308 (1910).

Cissampelos calcarifera Burch., Trav. 2: 266 (1824). Type: Lower Campbell, Burchell 1795 (PRE, iso.!).

A. burchelliana Miers ex Harv. in Harv. et Sond., F.C. loc. cit. Type: Lower Campbell, Burchell 1795 (PRE, iso.!).

Antizoma harveyana Miers ex Harv. in Harv. et Sond., F.C. 1: 12 (1859); Miers in Contrib. Bot. 3: 200 (1871); Diels in Engl., Pflanzenr. IV-94: 309 (1910); Type: Transvaal, Burke s.n. (PRE, holo.!). *Cissampelos angustifolius* Burch. var. *harveyana* (Miers ex Harv.) Th. Dur. et Schinz, C. F. Afr. 1.2: 49 (1898).

2. ANTIZOMA CAPENSIS

Linnaeus (f.) (1781) assigned this plant, collected by Thunberg, to the genus *Cissampelos*.

In 1859, Harvey described a variety of this taxon, namely var. *pulverulenta*, which, being pubescent on both sides of the lamina, differs from the typical variety.

Diels (1910) in his survey of the Menispermaceae in Engl. Pflanzenr. IV-94, transferred this species with the two varieties to *Antizoma*.

The reason for this is not very clear, but it was presumably done because the female flower of *Antizoma capensis*, like the other *Antizoma* spp., usually has two sepals and two petals, whereas, according to Diels, the female flower of *Cissampelos* has only one sepal and one petal (rarely two or three petals).

It is evident that he was unaware of the fact that the female flower of *Cissampelos torulosa* usually has two sepals and two petals (in his species description of *C. torulosa* no mention was made of the exact number of sepals and petals).

The morphology of the male flowers of *Antizoma* and *Cissampelos* is very similar. In both genera, the synandrium varies with 4-10 or more locules. In fact, both *Antizoma capensis* and *Cissampelos torulosa* have a 4-loculed synandrium.

Therefore, regarding the morphology of the male and female flowers, *Antizoma capensis* and *Cissampelos torulosa* are very much alike.

Furthermore, when viewing other characteristics of the plants, the similarity between *Antizoma capensis* and *Cissampelos torulosa* becomes more obvious. The outline of the lamina of *Antizoma capensis* shows a greater similarity with that of *Cissampelos*, than with that of the other species of *Antizoma* (Fig. 1).

The leaves of *Antizoma angustifolia* and *A. miersiana* usually have short petioles, varying from 0,5 mm-5 mm, seldom longer, while the longer petiole of *Antizoma capensis* (up to 25 mm) corresponds more closely with that of *Cissampelos* (Fig. 1). The spines or tubercles at the base of the petiole, which are a characteristic feature of both *Antizoma angustifolia* and *A. miersiana*, are absent in *A. capensis* and in *Cissampelos*.

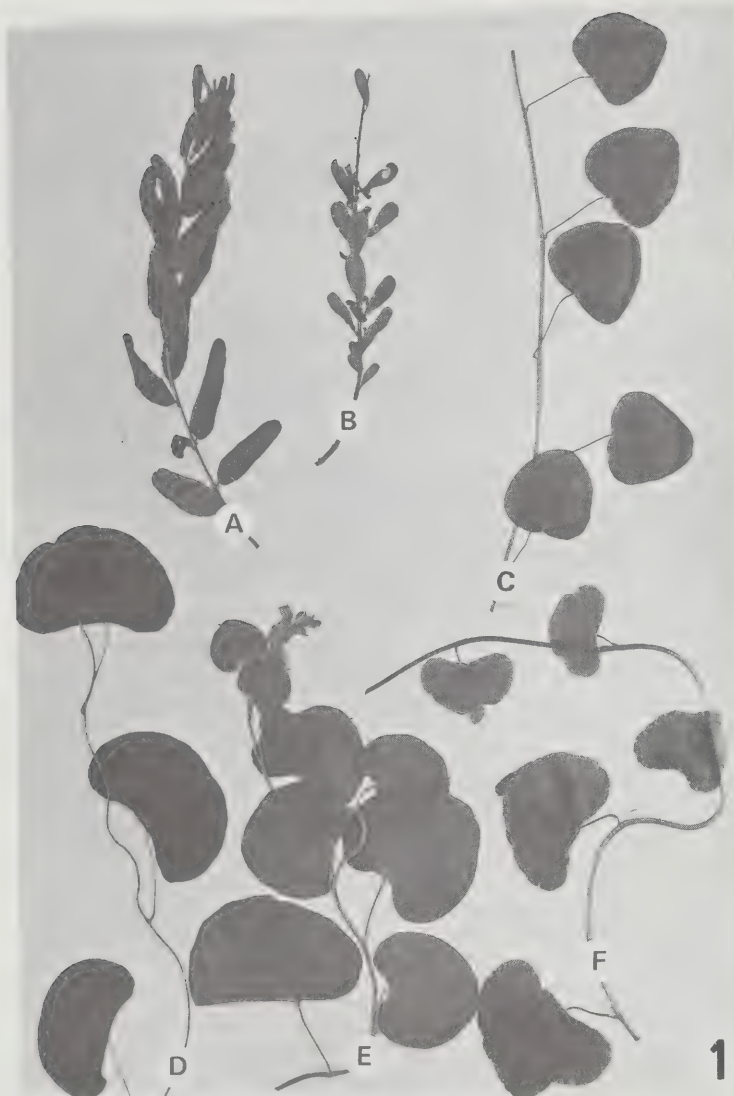


FIG. 1

Vegetative parts, showing the outline of the leaves of *Antizoma angustifolia* (A); *A. miersiana* (B); *Cissampelos capensis* (C); *C. torulosa* (D); *C. mucronata* (E) and *C. hirta* (F).

Contrary to this, the structure of the endocarp of *Antizoma capensis* suggests a closer relationship with the other *Antizoma* spp. while the pollen morphology and anatomy of the leaf and young stem of *Antizoma* and *Cissampelos* are very similar and offer very little help in assigning a specimen to any one of the two genera.

Thus, after studying fresh material as well as all the available herbarium material in South Africa, and taking the above-mentioned facts into consideration, I am convinced that the variety described by Harvey should be reduced to synonymy and the name *Antizoma capensis* must be changed back to *Cissampelos capensis*.

Cissampelos capensis L.f., Suppl.: 432 (1781); Thunb., Prodr.: 110 (1800); DC., Syst. Nat. 1: 538 (1818); ——— Prodr. 1: 102 (1824); Harv. in Harv. et Sond., F.C.: 11 (1859); Miers in Contrib. Bot. 3: 187 (1871). Type: Cape Province; *Thunberg s.n.* Herb. no. 23798 (UPS, syn.; only photo seen).

C. capensis L.f. var. *pulverulenta* Harv. in Harv. et Sond., loc cit..

C. humilis Poir. in Lam., Encycl. 5: 11 (1804). Type: *Sonnerat s.n.* Herb. Lam. (P, syn.; only photo seen).

C. fruticosa L.f., Suppl.: 432 (1781); Ecklon & Zeyher, Enum. 17: 3 (1834). Type: Cape Province; *Thunberg s.n.* Herb. no. 23800 (UPS, syn.; only photo seen).

Antizoma capensis (L.F.) Diels in Engl., Pflanzenr. IV-94: 307 (1910).

A. capensis (L.F.) Diels var. *pulverulenta* (Harv.) Diels in Engl. loc cit.; Merxm., F.S.W.A. 38: 2(1968).

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